

Statin warning for pregnant women

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Pregnant women or those hoping to start or extend a family should avoid using the cholesterol-lowering drugs statins, say scientists.

Current clinical guidelines already recommend that women who are pregnant should stop taking statins but the advice is based on the knowledge that cholesterol is essential for normal fetal development.

Indeed, a 2007 study examining the risk of congenital anomalies in children of pregnant women using statins suggested that the detrimental effects of the drugs may be restricted to fat-soluble or 'lipophilic' statins only.

But new research from The University of Manchester has shown that even water-soluble or 'hydrophilic' statins, such as pravastatin, can affect placental development leading to worse pregnancy outcomes.

"The rapid rise in obesity and type-2 diabetes is a major health issue and affected individuals are often treated with statins to lower circulating cholesterol levels and reduce the risk of heart disease," said Dr Melissa Westwood, a Senior Lecturer in Endocrinology based at the Maternal and Fetal Health Research Centre at St Mary's Hospital, Manchester.

"Given the evolving demographic profile of these conditions, such drugs are increasingly prescribed to women of reproductive age but the actions of statins are not limited to the regulation of cholesterol levels, as they can affect the production of other chemicals in the body too.

"Our study examined the effects that both lipophilic and hydrophilic statins had on a key biological system that is crucial for maintaining the normal function of the placenta, which acts as the nutrient-waste exchange barrier between mother and fetus."

The research, funded by the Biotechnology and Biological Sciences Research Council (BBSRC), used a placental-tissue model that could be maintained in a viable state outside the body for several days and tested the effects of two different statins – one water-soluble and one that dissolves in fat.

As expected, the fat-soluble statin, cerivastatin, affected the placenta resulting in reduced growth but the researchers also found that pravastatin – the water-soluble statin thought to be potentially compatible for use in pregnancy – had the same detrimental effect.

"These results clearly show that the effect of statins on the placenta is not dependent on their lipophilicity as had previously been suggested," said Dr Westwood, whose findings are published in the *Journal of Cellular and Molecular Medicine*.

"While hydrophilic statins have not been reported to increase the incidence of fetal malformations, our research suggests that they will have a detrimental effect on placental growth, which is likely to result in poor pregnancy outcome.

"Healthcare professionals should continue to advise women to avoid the use of any type of statin once they plan to start a family or when a pregnancy is suspected or confirmed."

Source: University of Manchester

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